UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

SEP 29 2009

REPLY TO THE ATTENTION OF:

WW-16J

Ms. Martha Clark Mettler
Deputy Assistant Commissioner
Office of Water Quality
Indiana Department of Environmental Management
100 North Senate Ave.
Mail Code IGN 1315
Indianapolis, IN 46204-2251

Dear Ms. Mettler:

The U.S. Environmental Protection Agency conducted a complete review of the final Total Maximum Daily Loads (TMDLs), including supporting documentation and information, for the Kankakee/Iroquois River Watershed. The Kankakee/Iroquois Watershed is located in Indiana and Illinois. This approval addresses only the Indiana portion of the watershed. The TMDLs address the impaired designated Recreational Use. The cause of impairment is excess pathogens. The TMDLs were calculated for *E. coli* bacteria.

These TMDLs meet the requirements of Section 303(d) of the Clean Water Act and EPA's implementing regulations at 40 C.F.R. Part 130. Therefore, EPA hereby approves 80 TMDLs for *E. coli* bacteria in the Kankakee/Iroquois River Watershed. The statutory and regulatory requirements, and EPA's review of Indiana's compliance with each requirement, are described in the enclosed decision document.

We wish to acknowledge Indiana's effort in submitting these TMDLs as required and look forward to future TMDL submissions by the State of Indiana. If you have any questions, please contact Mr. Dean Maraldo, Acting Chief of the Watersheds and Wetlands Branch, at 312-353-2098,

Sincerely,

Tinka G. Hyde
Director, Water Division

Enclosure

TMDL: Kankakee/Iroquois River, Indiana
Date: SEP 30 2009

DECISION DOCUMENT FOR APPROVAL OF THE KANKAKEE/IROQUOIS RIVER TMDL IN INDIANA

Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations at 40 C.F.R. Part 130 describe the statutory and regulatory requirements for approvable TMDLs. Additional information is generally necessary for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and EPA regulations, and should be included in the submittal package. Use of the verb "must" below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation. Use of the term "should" below denotes information that is generally necessary for EPA to determine if a submitted TMDL is approvable. These TMDL review guidelines are not themselves regulations. They are an attempt to summarize and provide guidance regarding currently effective statutory and regulatory requirements relating to TMDLs. Any differences between these guidelines and EPA's TMDL regulations should be resolved in favor of the regulations themselves.

1. Identification of Waterbody, Pollutant of Concern, Pollutant Sources, and Priority Ranking

The TMDL submittal should identify the waterbody as it appears on the State's/Tribe's 303(d) list. The waterbody should be identified/georeferenced using the National Hydrography Dataset (NHD), and the TMDL should clearly identify the pollutant for which the TMDL is being established. In addition, the TMDL should identify the priority ranking of the waterbody and specify the link between the pollutant of concern and the water quality standard (see section 2 below).

The TMDL submittal should include an identification of the point and nonpoint sources of the pollutant of concern, including location of the source(s) and the quantity of the loading, e.g., lbs/per day. The TMDL should provide the identification numbers of the NPDES permits within the waterbody. Where it is possible to separate natural background from nonpoint sources, the TMDL should include a description of the natural background. This information is necessary for EPA's review of the load and wasteload allocations, which are required by regulation.

The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as:

(1) the spatial extent of the watershed in which the impaired waterbody is located;
(2) the assumed distribution of land use in the watershed (e.g., urban, forested, agriculture);
(3) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources;
(4) present and future growth trends, if taken into consideration in preparing the TMDL (e.g., the TMDL could include the design capacity of a wastewater treatment facility); and

(5) an explanation and analytical basis for expressing the TMDL through *surrogate measures*, if applicable. *Surrogate measures* are parameters such as percent fines and turbidity for sediment impairments; chlorophyll *a* and phosphorus loadings for excess algae; length of riparian buffer; or number of acres of best management practices.

Comment:
Location Description: Section 2.0 of the Kankakee/Iroquois River TMDL document (TMDL document) states that the Kankakee/Iroquois River Watershed is located in northwest Indiana and northeast Illinois, and is a tributary to the Illinois River. The Kankakee/Iroquois River Watershed is part of the Upper Illinois River Basin, and drains approximately 2,958 square miles in northwest Indiana and 2,168 square miles in northeast Illinois for a total of 5,153 square miles. Less than 1 percent of the watershed lies in Michigan and was not a part of this TMDL. Although the TMDL document was developed for both the Indiana and Illinois portions of the Kankakee/Iroquois River Watershed, for consistency and continuity, this decision document is for the approval of the TMDLs in the Indiana portion of the TMDL only.

The Kankakee River originates near South Bend, Indiana and flows in a general southwest direction until it turns westward at the confluence of the Iroquois River. The Kankakee River joins with the Des Plaines River to form the Illinois River. The Iroquois River is located in Indiana and Illinois and originates south of the Kankakee River Watershed and meets with the Kankakee River in the Lower Kankakee Subwatershed. It flows in a northeast to southwest pattern and turns westward where it meets with the Kankakee River. Major tributaries to the Kankakee River include the Iroquois River, the Little Kankakee River, and the Yellow River. The Kankakee/Iroquois River Watershed includes portions of 14 different counties in Indiana: Lake, Porter, Starke, Marshall, Pulaski, White, LaPorte, St. Joseph, Elkhart, Jasper, Newton, Benton, White, and Kosciusko.

The Kankakee River, the Iroquois River, and a number of tributaries are listed as impaired for *Escherichia coli* (*E. coli*) in Indiana (Section 2 of the TMDL document). Because of the scale of the watershed, IDEM divided the watershed into six major subwatersheds: Upper Kankakee River, Middle Kankakee River, Lower Kankakee River (addressed in the Illinois portion of the TMDL document), Yellow River, Upper Iroquois River, and the Lower Iroquois River (addressed in the Illinois portion of the TMDL document) (Figure 1 of the TMDL document). The watershed was further divided into 32 10-digit Hydrologic Unit Codes (HUC-10) (Figure 2 and Table 2 of the TMDL document), and the HUC-10 subwatersheds were further subdivided into 72 12-digit Hydrologic Unit Codes (HUC-12) subwatersheds. For each of the 72 HUC-12 subwatersheds, a load duration calculation was developed based on site-specific sampling data to determine loading capacity. The resulting 72 TMDL calculations address the entire HUC-12 subwatershed, including smaller tributaries. EPA concurs and agrees that the TMDLs address the entire HUC-12 as developed. In select subwatersheds, the HUC-12 subwatershed TMDL addresses multiple 2006 TMDL-listed segments for a total of 80 TMDLs.

Topography and Land Use: Section 2.2 of the TMDL document states that agricultural use is the predominant land use in the watershed with 77% of the land used for corn and soybean crop production. Eight percent of the land is forested and another eight percent is developed.

Pasture/hay represents three percent of the watershed. The remaining land categories represent less than 4 percent of the total land area. IDEM also determined land use for each HUC-10 and HUC-12; the land use for each HUC-12 subwatershed is included in the TMDL tables in Chapter 7 of the TMDL document.

The watershed has soils of high to moderate permeability (A soils -26%, B soils – 29%); soil types C (21%) and D (11%) and some mixed soil types make up the remaining soil and are all poorly to very poorly drained. IDEM noted that soil infiltration rates can affect bacteria loading within a watershed (Section 2.3 of the TMDL document). During high flows, areas with low soil infiltration rates can flood and discharge high bacteria loads to nearby waterways. These soils also promote run-off and bacteria loads can be more easily washed into the waterbodies. Soils with high soil infiltration rates can slow the movement of bacteria to streams and act as a filter.

The estimated population of the watershed is just over 1 million with approximately 77% of the population classified as rural residents and 23% classified as urban residents. There are 19 cities with populations over 1,000 within the Indiana portion of the watershed.

Subwatershed information:

Upper Kankakee River Subwatershed

Section 4.1 of the TMDL document states that the Upper Kankakee River Subwatershed lies solely in Indiana, and covers nearly 663 square miles of the headwater reaches of the Kankakee River. The Kankakee River drains portions of St. Joseph, La Porte, Marshall, and Starke Counties. In addition to the southern suburbs of South Bend, the Upper Kankakee ***River Subwatershed*** includes the cities of La Porte, Koontz Lake, Walkerton, North Liberty, and New Carlisle. Land use/land cover in the Upper Kankakee is primarily agricultural (63%). Forested areas comprise 17% of the watershed area and approximately 10 percent of the land is developed.

Middle Kankakee River Subwatershed

Section 4.2 of the TMDL document states that the Middle Kankakee River Subwatershed lies primarily within Indiana; the most downstream section is in Illinois. The subwatershed drains almost 1,000 square miles and covers portions of LaPorte, Starke, Jasper, Lake, Newton, Will, and Kankakee Counties. Cities within the Middle Kankakee River Subwatershed include Wanatah, Wheatfield, De Motte, Roselawn, Lowell, Lake Dalecarlia, St. John, and Lake of the Four Seasons. Land use in the Middle Kankakee River Subwatershed is dominated by agricultural land (71%) followed by forest (11%). Developed land and grasslands account for 8% and 4%, respectively. The remaining land categories comprise less than 6% of the watershed area.

Yellow River Subwatershed

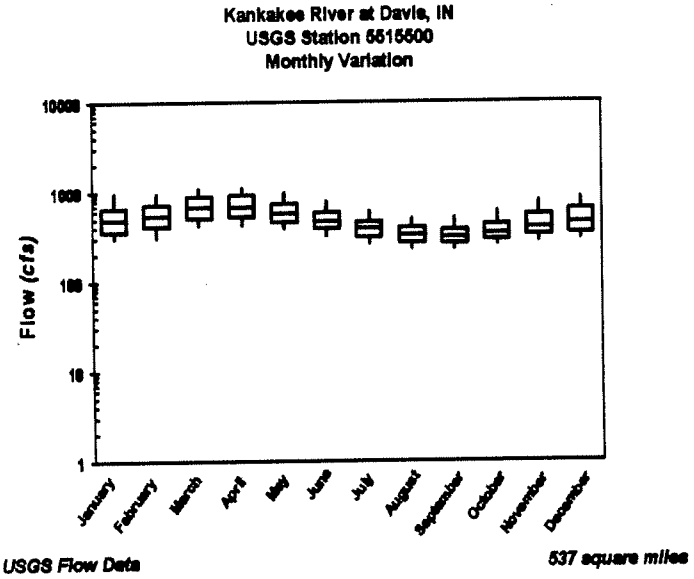
The Yellow River Subwatershed lies solely in Indiana, covering nearly 540 square miles of the headwater reaches of the Kankakee River (Section 4.3 of the TMDL document). It drains portions of St. Joseph, Kosciusko, Marshall, Starke, Pulaski, and Elkhart Counties. Cities within the Yellow River Subwatershed include Bremen, Plymouth, Argos, Knox, and North Judson. As in the Upper and Middle Kankakee Subwatersheds, the land in the Yellow River Subwatershed is primarily used for agriculture (68%). Forested, developed and pasture land comprise 14%, 8%,

and 4% of the total subwatershed area, respectively. Grasslands occupy nearly 2% of the total area. Wetlands and open water comprise 4% of the total subwatershed area.

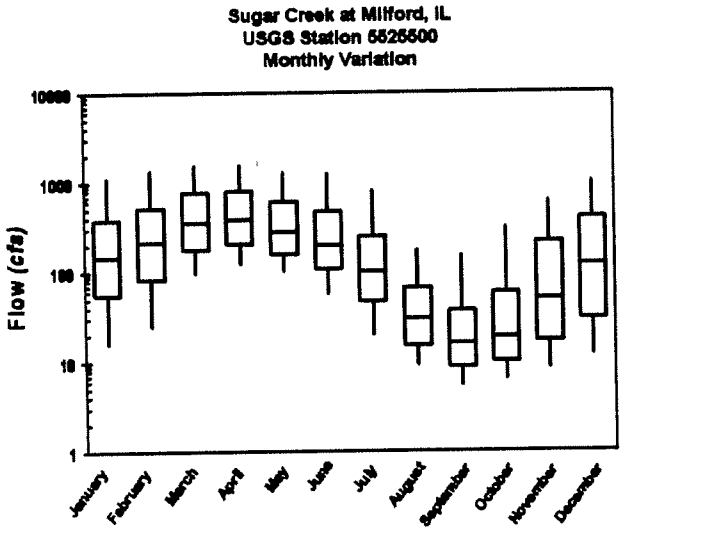
Upper Iroquois River Subwatershed

The Upper Iroquois River Subwatershed lies primarily within Indiana; the most downstream section is in Illinois (Section 4.4 of the TMDL document). The subwatershed drains almost 685 square miles and covers portions of Starke, Pulaski, White, Jasper, Newton, Benton, and Iroquois Counties. Cities within the Upper Iroquois Subwatershed include Rensselaer, Collegeville, Goodland, Brook, Kentland, and Sheldon. This subwatershed is predominantly used for agriculture (84%). Developed and forested lands each account for 6% of the total watershed area. The remaining land use categories comprise less than 4% of the subwatershed area.

Hydrology: IDEM noted that the two figures below illustrate the monthly variation in flow patterns in the Kankakee/Iroquois River Watershed (Section 2.4 and Figure 7 of the TMDL document). Flows in general are greatest during April and May and least in August and September. Both sites are comparable in drainage area but the Kankakee River at Davis is in the northern part of the watershed which is historically rich in wetlands that provide good base flows. These wetland areas buffer wide variations in flow conditions that result from storm events or drought conditions.



The Sugar Creek site is in the southwestern part of the watershed. Soil conditions here do not provide the high base flows observed in the Upper Kankakee River. Land use in this drainage area is also dominated by row crop agriculture. Many of these fields are tile drained, which contributes to the flashier flows in response to storm events.



Similar flow responses can be seen in the load duration calculations developed by IDEM for the TMDLs. The load duration curve calculations were provided to EPA on a CD from Tetra Tech entitled "Kankakee/Iroquois Watershed TMDL Administrative Record (May 27, 2009)". The significance of the flow patterns illustrated for the Sugar Creek site and the Kankakee River at Davis is that the flashier flow pattern in the southwestern

part of the watershed shows this subwatershed has greater sensitivity to precipitation events and may have greater pollutant loadings after storm events.

Pollutant of concern: The pollutant addressed in this TMDL is *E. coli* bacteria.

Pollutant sources: Section 1.0 in the introduction of the TMDL document states that the primary sources of contamination in the Kankakee/ Iroquois River Watershed are from nonpoint sources. Human and animal population and density estimates for each subwatershed were meant to provide a relative comparison of the abundance of nonpoint sources (e.g. failing septic systems, wildlife and unregulated livestock operations). These estimates were for the purpose of guiding implementation and were not used to determine loadings. (See annotated Comments and Questions, August 10, 2009). Section 4.0 of the TMDL document provides further details regarding significant sources of bacteria in the six subwatersheds of the Kankakee/ Iroquois River Watershed.

Upper Kankakee River Subwatershed

Point Sources: Section 4.1.1 of the TMDL document states that there are 10 active facilities with National Pollutant Discharge Elimination System (NPDES) permits, which discharge wastewater containing bacteria (Table 9 and Figure 9 of the TMDL document) in the Upper Kankakee River Subwatershed. All municipal facilities in Indiana are required to disinfect their effluent during the recreational season (April 1 to October 31). The total design flow for the 10 active facilities is 10.8 MGD. There are no combined sewer overflows (CSOs) in the Upper Kankakee River Subwatershed. IDEM noted that there are two NPDES permitted municipal separate storm sewer system (MS4) communities as described in Section 4.1.1.3 of the TMDL document. Table 11 of the TMDL document identifies the 3 NPDES permitted concentrated animal feeding operations (CAFOs) in the watershed. CAFOs are not authorized to discharge to waters of the state (Section 4.1.1.4 of the TMDL document).

Nonpoint Sources: Failing septic systems can contribute pathogens to the waterbodies when ponding or breakthrough of waste drains to the waterbody. An inventory of septic systems within the watershed was not available; therefore, the rural population density was calculated to obtain a general representation of the number of systems (Section 4.1.2 of the TMDL document). The rural population density is shown in Table 12 of the TMDL document to be 214 persons per square mile. The Upper Kankakee River Subwatershed is dominated by hydrologic soil groups A and B. The high to moderate infiltration rates associated with these soils lessen the risk of bacteria contributions from failing septic systems. Confined feeding operations (CFOs) are medium-sized animal feeding operations not regulated by the NPDES Program and are considered to be nonpoint sources by EPA (Section 4.1.2.2 of the TMDL). IDEM, however, issues state permits to CFOs, which require zero discharge from the animal handling facility. IDEM identified 16 CFOs in the Upper Kankakee River Subwatershed (Table 13 of the TMDL document). Livestock operations not regulated by an NPDES or state permit are also a potential source of bacteria to streams. There are an estimated 96,620 animal units in the Upper Kankakee River Subwatershed based on area-weighted, county-wide data available from the National Agricultural Statistic Service. IDEM noted that manure from CFOs and unregulated livestock operations can create environmental concerns as a result of:

- Manure leakage or spillage from storage pits;
- Improper application of manure contaminating surface or ground water;
- Run-off from manure application in fields; and
- Run-off from livestock in pastures near the waterbodies.

IDEM also estimated a deer density of 3 deer per square mile in the Upper Kankakee River Subwatershed based on area-weighted county-wide deer data.

Middle Kankakee River Subwatershed

Point sources: There are 28 active facilities with NPDES permits that discharge wastewater containing bacteria within the Middle Kankakee River Subwatershed (Table 17 of the TMDL document). The largest of these is the Lowell WWTP with an average design flow of four MGD. There is one CSO for this subwatershed located in the City of Lowell. There are eight MS4 communities with NPDES permits in the Middle Kankakee River Subwatershed that total 32 square miles (Table 19 of the TMDL document). There are eight CAFOs with NPDES permits in the subwatershed: six are located south and southeast of Roselawn (Table 20 of the TMDL document).

Nonpoint Sources: IDEM calculated the rural population density at 315 persons per square mile, which is significantly higher than that of the Upper Kankakee River Subwatershed (Section 4.2.2 of the TMDL document). Due to this, and an increase in the occurrence of soil group C (which has a poor infiltration rate), IDEM believes there is an increased risk of bacteria contributions from failing septic systems to the Middle Kankakee River Subwatershed as compared to the Upper Kankakee River Subwatershed. There are 31 state permitted CFOs in the Middle Kankakee River Subwatershed primarily in the southern part of the watershed near Roselawn and in the northeastern part of the watershed near Wanatah. Livestock animal unit density is estimated to be 65 animals per square mile, and deer density is estimated to be 4 deer per square mile.

Yellow River Subwatershed

Point sources: There are 10 facilities with NPDES permits that discharge wastewater containing bacteria in the Yellow River Subwatershed (Table 26 of the TMDL document). Plymouth is the largest WWTP with an average design flow of 3.5 MGD. There are CSOs in Plymouth, Nappanee, and North Judson that are potential sources of bacteria in the Yellow River Subwatershed. Plymouth is the only MS4 community with an NPDES permit, covering 7 square miles, and there are 4 CAFOs with NPDES permits in the Yellow River Watershed (Table 28 of the TMDL document).

Nonpoint Sources: IDEM calculated the rural population density at 141 persons per square mile (Section 4.3.2 of the TMDL document). Due to the lower rural population and a high level of soil groups A and B (which have high to good infiltration rates), IDEM believes there is a lower risk of failing septic systems in this subwatershed. There are 16 CFOs located along the border of the subwatershed. Livestock animal unit density was calculated at 329 units per square mile, which is considerably higher than densities for the Upper and Middle Kankakee River

Subwatersheds. Deer density was estimated at 5 deer per square mile.

Upper Iroquois River Subwatershed

Point Sources: There are eight facilities with NPDES permits that discharge wastewater containing bacteria in the Upper Iroquois River Subwatershed (Table 34 of the TMDL document). Rensselaer is the largest facility with an average design flow of 1.2 MGD. Rensselaer also contains the CSO outfalls (9) in the subwatershed. There are no MS4 communities and there are 12 CAFOs with NPDES permits in the subwatershed (Table 36 of the TMDL document).

Nonpoint Sources: IDEM calculated a rural density of 29 persons per square mile, which is significantly less than the Upper and Middle Kankakee River Subwatersheds and the Yellow River Subwatershed. Although there is a higher percentage of soil group C (24%) in the watershed, IDEM believes the low rural population density lowers the risk of failing septic systems as a significant source of bacteria. There are 23 CFOs in the subwatershed. Livestock animal unit density was calculated as 185 units per square mile. Deer were calculated to be 2 deer per square mile.

Lower Kankakee River and Lower Iroquois River Subwatersheds

Only a small percentage of the Lower Kankakee River and Lower Iroquois River Subwatersheds lie within Indiana. For these subwatersheds no greater detail is discussed in this decision document other than that provided for in the overall Kankakee description above. These waterbodies will be addressed in the decision document for the Illinois portion of the Kankakee/Iroquois River TMDL.

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this first element.

2. Description of the Applicable Water Quality Standards and Numeric Water Quality Target

The TMDL submittal must include a description of the applicable State/Tribal water quality standard, including the designated use(s) of the waterbody, the applicable numeric or narrative water quality criterion, and the antidegradation policy. (40 C.F.R. §130.7(c)(1)). EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

The TMDL submittal must identify a numeric water quality target(s) - a quantitative value used to measure whether or not the applicable water quality standard is attained. Generally, the pollutant of concern and the numeric water quality target are, respectively, the chemical causing the impairment and the numeric criteria for that chemical (e.g., chromium) contained in the water quality standard. The TMDL expresses the relationship between any necessary reduction of the pollutant of concern and the attainment of the numeric water quality target. Occasionally, the pollutant of concern is different from the pollutant that is the subject of the numeric water quality target (e.g., when the pollutant of concern is phosphorus and the numeric water quality target is expressed as Dissolved Oxygen (DO) criteria). In such cases, the TMDL submittal should

explain the linkage between the pollutant of concern and the chosen numeric water quality target.

Comment:
Use Designation: The designated use for the waterbodies in the Kankakee/Iroquois River Watershed is for full body contact recreational use during the recreational season, April 1st through October 31st.

Numeric Criteria/Targets for E.coli: The Kankakee and Iroquois Rivers in Indiana are listed as impaired for *E. coli*. Numeric criteria for *E. coli* were used as the basis of the Kankakee/Iroquois River TMDLs. Indiana Administrative Code (IAC) Title 327, Article 2- Section 3 (a) (1) designates all surface waters of the state for full body contact recreation as provided in Section 6(d). Section 6(d) establishes the full body contact recreational use *E. coli* Water Quality Standard (WQS) for all waters in the non-Great Lakes system as follows:

> d) This subsection establishes bacteriological quality for recreational uses during the recreational season as follows:
> (1) The recreational season is defined as the months of April through October, inclusive.
> (2) In addition to subsection (a), the criteria in this subsection are to be used to do the following:
> (A) Evaluate waters for full body contact recreational uses.
> (B) Establish wastewater treatment requirements.
> (C) Establish effluent limits during the recreational season.
> (3) For full body contact recreational uses, *E. coli* bacteria shall not exceed the following:
> (A) One hundred twenty-five (125) per one hundred (100) milliliters as a geometric mean based on not less than five (5) samples equally spaced over a thirty (30) day period.
> (B) Two hundred thirty-five (235) per one hundred (100) milliliters in any one (1) sample in a thirty (30) day period, except that in cases where there are at least ten (10) samples at a given site, up to ten percent (10%) [1] of the samples may exceed two hundred thirty-five (235) cfu or MPN per one hundred (100) milliliters where the:
> (i) *E. coli* exceedances are incidental and attributable solely to *E. coli* resulting from the discharge of treated wastewater from a wastewater treatment plant as defined at IC 13-11-2-258; and
> (ii) criterion in clause (A) is met.

The target for this TMDL is the WQS of 125 #/100 ml as a 30-day geometric mean and not to exceed 235 #/100 ml in any one sample in a thirty day period during the recreational season. To determine the loads, IDEM used the 125 #/100 ml portion of the standard (IAC Title 327, Article 2 Section 6(d)).

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this second element.

1 Confirmed with Staci Goodwin by phone on August 31, 2009 that this version of the rule was the rule to be applied to this TMDL. See administrative record.

3. Loading Capacity - Linking Water Quality and Pollutant Sources

A TMDL must identify the loading capacity of a waterbody for the applicable pollutant. EPA regulations define loading capacity as the greatest amount of a pollutant that a water can receive without violating water quality standards (40 C.F.R. §130.2(f)).

The pollutant loadings may be expressed as either mass-per-time, toxicity or other appropriate measure (40 C.F.R. §130.2(i)). If the TMDL is expressed in terms other than a daily load, e.g., an annual load, the submittal should explain why it is appropriate to express the TMDL in the unit of measurement chosen. The TMDL submittal should describe the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In many instances, this method will be a water quality model.

The TMDL submittal should contain documentation supporting the TMDL analysis, including the basis for any assumptions; a discussion of strengths and weaknesses in the analytical process; and results from any water quality modeling. EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

TMDLs must take into account *critical conditions* for stream flow, loading, and water quality parameters as part of the analysis of loading capacity (40 C.F.R. §130.7(c)(1)). TMDLs should define applicable *critical conditions* and describe their approach to estimating both point and nonpoint source loadings under such *critical conditions*. In particular, the TMDL should discuss the approach used to compute and allocate nonpoint source loadings, e.g., meteorological conditions and land use distribution.

Comment:
Loading capacity (LC) = TMDL = WLA + LA + MOS

Table 1 displays the TMDLs for HUC-12 subwatersheds in the Indiana Kankakee/Iroquois River Watershed that were listed on the 2006 Indiana 303(d) list as being impaired for *E. coli* bacteria. There is a total of 23 TMDLs developed for these subwatersheds. Table 1 (attached to this decision document) also displays the TMDLs for HUC-12 subwatersheds in the Indiana Kankakee/Iroquois River Watershed where samples taken in 2008 indicated exceedances of Indiana's State WQSs for *E. coli* bacteria. Listed for each HUC-12 subwatershed is the TMDL table number in the TMDL Document. Actual TMDLs for each flow regime are given. Detailed information for the waste load allocations (WLAs) and load allocations (LAs) can be found in the tables attached to this document. Information on margin of safety (MOS) can be found in Section 6 of this decision document.

Method for cause and effect relationship:
IDEM adapted the load duration curve process described in Section 5.1 of the TMDL document to calculate the total maximum daily load for each HUC-12 in the Kankakee/Iroquois River Watershed. This modified load duration curve approach is described below and was confirmed

with IDEM and Tetra Tech (see voicemail and phone records in the administrative record). A TMDL calculation was developed for each of the 5 flow frequency zones described below for most HUC-12 subwatersheds in the Kankakee/Iroquois River Watershed. The process is described below:

1. A flow duration curve calculation was developed for each HUC-12 subwatershed by generating a flow frequency table for each subwatershed using flow data from USGS gages. For those HUC-12 subwatersheds without a USGS gage station, IDEM estimated the flows based upon the drainage area ratio approach as outlined in Section 5.1.1 of the TMDL document. Table 58 of the TMDL document provides the existing site assignments for estimating flows at the ungaged HUC-10 and HUC-12 subwatersheds.
2. Additional flows were added to certain locations to account for upstream WWTPs and CSOs.
3. The flow calculations were translated into load duration (TMDL) calculations. To accomplish this, each flow value was multiplied by the WQS (125 #/100 ml) and by a conversion factor. The load duration calculations for each HUC-12 subwatershed can be found on the Tetra Tech CD in the file folder LDC.
4. The TMDL was developed for the median flow (identified using the load duration calculation or TMDL Curve calculation) for each of 5 major flow regimes multiplied by the target concentration for bacteria and by a conversion factor:

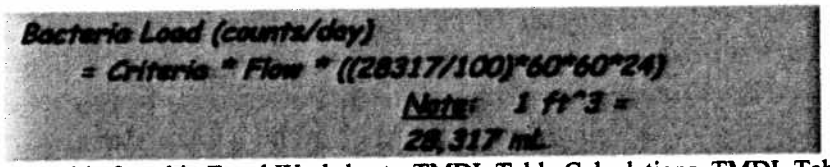


Table found in Excel Worksheet - TMDL Table Calculations, TMDL Tables, LDC folder, Tetra Tech CD

5. The 5 major flow regimes are used by IDEM to aid with interpretation of the load duration calculations. IDEM will use these groupings to identify issues surrounding the impairment and to roughly differentiate between sources in the TMDL report. Table 57 of the TMDL summarizes the general relationship between the five hydrologic zones and potential contributing source areas; however Table 57 is not specific to any individual pollutant or subwatershed.

   The flow regimes are typically divided into the following five "hydrologic zones" as defined in EPA's 2007 document "An Approach for Using Load Duration Curves in the Development of TMDLs" (EPA 841-B-07-006):

   High flow zone: stream flows that plot in the 0 to 10-percentile range, related to flood conditions;
   Moist zone: flows in the 10 to 40-percentile range, related to wet weather conditions;
   Mid-range zone: flows in the 40 to 50-percentile range, median stream flow conditions;
   Dry zone: flows in the 60 to 90-percentile range, related to dry weather conditions; and
   Low flow zone: flows in the 90 to 100-percentile range, related to drought conditions.

6. Additionally, load duration calculations were plotted into load duration curves for six major subwatersheds to provide more information about general source loading patterns. The result

is the line representing the standard or TMDL target. The load duration curves are contained on the Tetra Tech CD under the file Water Quality Analysis, Load Duration Analysis, included in the Administrative Record.

7. Each water quality sample can be converted to a load by multiplying the water quality sample concentration by the average daily flow on the day the sample was collected. Then, the individual loads can be plotted on the TMDL graph (observed load). Points plotting above the curve represent deviations from the water quality standard and the daily allowable load.
8. The area beneath the curve in the load duration curves is interpreted as the loading capacity of the stream under all flow conditions. The difference between a point above the curve (existing conditions) at a given flow regime and the curve at the same flow regime is the amount that must be reduced to meet the WQS.
9. Graphs, called water quality duration curves, were also provided for the six major subwatersheds and can be found in Figure 28 of the TMDL document for the Upper Kankakee River Subwatershed and Figure 32 of the TMDL document for the Middle Kankakee River Subwatershed. Water quality duration curves are created using the same steps as those used for load duration curves, except that concentrations rather than loads are plotted on the vertical axis.
10. The right side of the water quality duration curves and load duration curves show low flow conditions with sources being primarily failing septic systems, illicit sewer connections, or direct animal waste. The left side shows high flow conditions with the sources more connected to runoff conditions in wet weather events. These patterns are useful to apply best management practices (BMP)s effectively to address the most appropriate source categories and watershed conditions.

The TMDLs for each HUC-12 were provided in the TMDL document in Section 7.0. Those loads are summarized in Table 1, attached to this decision document, for the impairments listed in 2006 and the impairments that were identified in 2008 that will be listed in 2010.

IDEM believes that, while it is difficult to perform a site specific assessment of the causes of high bacteria for each location in the Kankakee/Iroquois River Watershed, it is reasonable to expect that the general patterns and trends can be used to provide some perspective on the most significant sources.

Table 59 in Section 6 of the TMDL document summarizes several of the potential bacteria sources in each of the 6 major subwatershed groupings used by IDEM, along with the *E. coli* data collected by IDEM in 2008. General trends were also discussed in the TMDL document. The highest *E. coli* counts were found in the Yellow River, Upper Iroquois River and Upper Kankakee River Subwatersheds which are all characterized by relatively high animal unit densities. The animal unit density of each subwatershed is strongly correlated to the geomean of *E. coli* counts in each subwatershed. The Yellow River, Upper Iroquois River and Upper Kankakee River areas are also headwater streams. These streams, therefore, have smaller drainage areas and, consequently, may have higher *E. coli* counts because there is less opportunity for dilution. These relationships are shown for the major subwatersheds of the Kankakee River in drainage area profiles (Figures 27, 31, 34, and 36 of the TMDL document).

Upper Kankakee River Subwatershed

In Section 6.1 of the TMDL document, IDEM explained that all but one site exceeded the geometric mean portion of the WQS. IDEM determined that exceedences were occurring under most flow regimes and at approximately the same level of exceedance. The water quality duration curve is Figure 28 of the TMDL document. The *E. coli* WQS of not-to-exceed 235 #/100 ml was frequently exceeded during high flows, moist conditions, midrange, and dry flows. Bacteria sources typically associated with these flows include failing septic systems, urban stormwater, CSOs, and runoff from agricultural areas.

Middle Kankakee River Subwatershed

In Section 6.1 of the TMDL document, IDEM explained that all but three sites exceeded the geometric mean portion of the WQS. IDEM determined that exceedences were occurring under most flow regimes, and at approximately the same level of exceedance (Figure 32 of the TMDL document). The *E. coli* WQS of not-to-exceed 235 #/100 ml was frequently exceeded during high flows, moist conditions, and midrange flows. Bacteria sources typically associated with these flows include failing septic systems, urban stormwater, CSOs, and runoff from agricultural areas. Most facilities in this subwatershed are in compliance except for the Hebron Municipal WWTP, which exceeded its *E. coli* permit limit 10 times between 2004 and 2006.

Yellow River and Upper Iroquois River Subwatersheds

IDEM determined that there is a lack of historical *E. coli* data needed for a water quality load duration analysis for the Yellow River and Upper Iroquois River Subwatersheds. Table 59 in However, Section 6.0 of the TMDL document suggests a relationship between potential sources and resulting water quality in all of the subwatersheds. In Figure 26 of the TMDL document, animal unit density appears to be strongly correlated with the geometric mean portion of *E. coli* counts in each subwatershed. Similar trends are not as apparent with the other sources listed in Table 59 of the TMDL document. One factor that may affect the source impact analysis is that headwater subwatersheds and some sampled tributaries often have a relatively small drainage area. These areas generally may have higher *E. coli* counts because there is less opportunity for dilution. Most NPDES facilities were in compliance with their permits; however, the Knox Municipal WWTP in the Yellow River subwatershed exceeded its *E. coli* permit limit 20 times between 2004 and 2006.

Using the load duration curve approach allows IDEM to determine which implementation practices are most effective for reducing pollutant loads based on flow magnitude. For example, if loads are significant during storm events, implementation efforts can target those BMPs that will most effectively reduce runoff. This allows for a more efficient implementation effort. These TMDLs are concentration-based and tie directly into Indiana's WQS for the pollutant. The target for these TMDLs is the WQS, and therefore meeting calculated loading capacities should result in attainment of the WQS.

A weakness of the load duration curve method is that nonpoint source load allocations are not assigned to specific sources within the subwatershed. In addition, the identified sources of the pollutants were assumed based on the type of source and land use in the subwatershed, rather than determined by detailed monitoring and sampling efforts. Some areas had to rely on flow

estimates utilizing nearby existing gages. Moreover, specific source reductions were not quantified, but were provided in the sampling tables as percent reductions required. EPA believes the strengths of the IDEM's approach to the Kankakee/Iroquois River TMDL outweigh the weaknesses and that the load duration curve method is appropriate based upon the information available. In the event that the pollutant levels do not meet WQSs in response to the implementation strategies described in the TMDL document, the strategies may be amended as new information on the subwatershed is developed to better account for sources contributing to the impairment and to focus source reduction efforts in the Kankakee/Iroquois River Watershed.

Critical conditions: IDEM determined that there is not any one specific condition that is the "critical" condition. The load duration calculations and other analyses show that exceedences occur under several flow regimes and varied from one major subwatershed to another depending on subwatershed characteristics and contributing sources (see *Method for cause and effect relationship* above). Loads enter the system under both wet and dry weather conditions, depending on the sources, and both were considered when developing the methodology. Section 3.2 of the TMDL document states that the TMDL considered the range of critical conditions at different locations by specifying different levels of reduction based on flow (Table 6 of the TMDL document).

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this third element.

4. Load Allocations (LAs)

EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity attributed to existing and future nonpoint sources and to natural background. Load allocations may range from reasonably accurate estimates to gross allotments (40 C.F.R. §130.2(g)). Where possible, load allocations should be described separately for natural background and nonpoint sources.

Comment:
The LAs are in Section 7.2 of the TMDL document and in Table 6 (attached) of the decision document. IDEM calculated the LAs for the Kankakee/Iroquois River TMDLs by subtracting the waste load allocations (WLAs) and margin of safety (MOS) from the allowable load for each pollutant. The LAs are presented by HUC-12 in Section 7.1 of the TMDL document. CFOs receive a zero discharge permit from the state of Indiana and therefore IDEM assigned LA of zero. A natural background component was not determined by IDEM.

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this fourth element.

5. Wasteload Allocations (WLAs)

EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to individual existing and future point source(s) (40 C.F.R. §130.2(h),

40 C.F.R. §130.2(i)). In some cases, WLAs may cover more than one discharger, e.g., if the source is contained within a general permit.

The individual WLAs may take the form of uniform percentage reductions or individual mass based limitations for dischargers where it can be shown that this solution meets WQSs and does not result in localized impairments. These individual WLAs may be adjusted during the NPDES permitting process. If the WLAs are adjusted, the individual effluent limits for each permit issued to a discharger on the impaired water must be consistent with the assumptions and requirements of the adjusted WLAs in the TMDL. If the WLAs are not adjusted, effluent limits contained in the permit must be consistent with the individual WLAs specified in the TMDL. If a draft permit provides for a higher load for a discharger than the corresponding individual WLA in the TMDL, the State/Tribe must demonstrate that the total WLA in the TMDL will be achieved through reductions in the remaining individual WLAs and that localized impairments will not result. All permitees should be notified of any deviations from the initial individual WLAs contained in the TMDL. EPA does not require the establishment of a new TMDL to reflect these revised allocations as long as the total WLA, as expressed in the TMDL, remains the same or decreases, and there is no reallocation between the total WLA and the total LA.

Comment:
Wasteload Allocation (WLA): IDEM's *E. coli* WLAs are based on the already established NPDES permit limits. The *E. coli* WLA is based on the 125 #/100 ml geometric mean portion of the WQS. The overall wasteload allocation for each subwatershed for the 5 main flow regimes are listed in the TMDL tables found throughout the TMDL document and are given in Tables 2 – 5, attached.

Individual WLAs were calculated based on each facilities average design flow multiplied by the *E. coli* permit limits and appropriate conversion factors. The tables containing WLAs for individual NPDES dischargers in both Indiana and Illinois are in Section 7.3 of the document and have been reproduced in Table 2, attached. There are 87 known individual NPDES discharagers within the Kankakee/Iroquois River Watershed with the potential to discharge fecal coliform or *E. coli* (Section 7.3 of the TMDL document). Seventy of these facilities discharge to streams with TMDLs. As required by the CWA, individual WLAs were developed for these permittees as part of the TMDL development process.

There are seven permitted MS4 communities in the Indiana portion of the Kankakee/Iroquois River Watershed. The jurisdictional areas of townships, municipalities, and urbanized areas were used as surrogates for the regulated area of each MS4 community. These areas were then used to calculate WLAs based on the proportion of the upstream drainage area located within the MS4 boundaries by multiplying that proportional area by the loading capacity of the assessment location. The MS4 WLAs therefore are equal to the estimated flows from the MS4 multiplied by 125 #/100 ml for *E. coli*. The WLAs are found in Table 278 of the TMDL and reproduced in Table 4, attached.

IDEM identified four CSOs in the Indiana portion of the Kankakee/Iroquois River Watershed. The WLAs for all the CSOs were calculated to be equal to the maximum observed daily flow (as

reported on the IDEM 2006 discharge monitoring reports) multiplied by 125 #/100 ml for *E. coli.* During the development of Long Term Control Plans for the CSO communities the WLA may be modified if deemed appropriate by the regulating authority and subject to Federal Regulations. The WLAs for CSOs are found in Table 3 attached.

IDEM has identified 28 CAFOs in the Kankakee/Iroquois River Watershed and the WLA for each is set to zero based on the Federal Regulations, which require zero discharge from these facilities. Table 279 of the TMDL document (Table 5, attached) provides the names and NPDES permit numbers for each facility. This limit on load is reasonable due to the federal regulatory requirement for the proper design, construction, operation, and maintenance of the structures to contain all manure, litter, and process wastewater including the runoff and direct precipitation from a 25 year, 24-hour rainfall event. Further, the allocation is based on the conditions of the NPDES permit providing that the WQS shall not be exceeded in the event of an overflow from production areas. WLAs from illicitly connected onsite septic systems (i.e., straight pipe dischargers) in the watershed are also set to zero.

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this fifth element.

6. Margin of Safety (MOS)

The statute and regulations require that a TMDL include a margin of safety (MOS) to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1)). EPA's 1991 TMDL Guidance explains that the MOS may be implicit, i.e., incorporated into the TMDL through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the MOS. If the MOS is implicit, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is explicit, the loading set aside for the MOS must be identified.

Comment:
Section 7.4 of the TMDL states that IDEM used a 10% explicit MOS as well as implicit MOS, as reflected in the allocations tables in Section 7.1 of the TMDL and Tables 1 and 2 of this decision document. IDEM states that using the load duration curve methodology allows for the MOS to be moderate; the curves minimize uncertainties associated with the loads because the loading capacity is simply a function of flow multiplied by the target concentration. Most of the uncertainty would be associated with the estimated flows in each assessed segment which were based on extrapolating flows from the nearest downstream USGS gage.

IDEM used an implicit MOS by comparing individual sample results to the 125 #/100 ml geometric mean component of the WQS. IDEM considered this a conservative approach as the WQS is based upon a geometric mean of 5 samples taken over a 30 day period. This approach in effect increases the reductions needed to meet the WQS.

IDEM also included additional MOS in the TMDL because no rate of decay was used in the

calculations for the TMDLs. As stated in *EPA's Protocol for Developing Pathogen TMDLs* (EPA 841-R-00-002), many different factors affect the survival of pathogens, including the physical condition of the water. These factors include, but are not limited to sunlight, temperature, salinity, and nutrient deficiencies. These factors vary depending on the environmental condition/circumstances of the water, and therefore it would be difficult to assert that the rate of decay caused by any given combination and degree of these environmental variables was sufficient enough to meet the WQS of 125 #/100 ml and 235 #/100ml. Thus, it is more conservative to apply the WQS as the MOS, because the WQS must be met at all times under all environmental conditions.

EPA finds that the TMDL submittal from IDEM contains an appropriate MOS satisfying all requirements concerning this sixth element.

7. Seasonal Variation

The statute and regulations require that a TMDL be established with consideration of seasonal variations. The TMDL must describe the method chosen for including seasonal variations. (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1)).

Comment:
Section 7.5 states that the load duration approach accounts for seasonality in the Upper and Middle Kankakee River and Yellow River Subwatershed areas by evaluating allowable loads on a daily basis over the entire range of observed flows and presenting daily allowable loads that vary by flow. The flow information from USGS gages used for flows and estimated flows had extensive flow data and therefore accounted for seasonal variations in flow, a key factor in determining the range of loadings throughout the year. Seasonal variations for *E. coli* are also addressed in this TMDL by only assessing conditions during the season when the water quality standard applies (April through October).

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this seventh element.

8. Reasonable Assurances

When a TMDL is developed for waters impaired by point sources only, the issuance of a National Pollutant Discharge Elimination System (NPDES) permit(s) provides the reasonable assurance that the wasteload allocations contained in the TMDL will be achieved. This is because 40 C.F.R. 122.44(d)(1)(vii)(B) requires that effluent limits in permits be consistent with "the assumptions and requirements of any available wasteload allocation" in an approved TMDL.

When a TMDL is developed for waters impaired by both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur, EPA's 1991 TMDL Guidance states that the TMDL should provide reasonable assurances that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable. This information is necessary for EPA to determine that the TMDL, including the

load and wasteload allocations, has been established at a level necessary to implement water quality standards.

EPA's August 1997 TMDL Guidance also directs Regions to work with States to achieve TMDL load allocations in waters impaired only by nonpoint sources. However, EPA cannot disapprove a TMDL for nonpoint source-only impaired waters, which do not have a demonstration of reasonable assurance that LAs will be achieved, because such a showing is not required by current regulations.

Comment:
Section 9.0 of the TMDL document provides information on reasonable assurance. Several NPDES facilities have been found to be in violation of their permits and an enforceable mechanism exists for reducing their loads. Rural and to a lesser extent, urban runoff, are considered to be primary sources of bacteria impairments in the Kankakee/Iroquois River Watershed. Meeting bacteria WQS will therefore rely on encouraging activities to address nonpoint sources of runoff.

A partial list of BMPs identified in the TMDL document that may be used to reduce bacteria loads in Kankakee/Iroquois River Watershed includes: riparian area management, manure collection and storage, conservation tillage, contour row-cropping, drift fences to limit livestock access to streams, septic management and education, and pet clean up and education.

These programs are more likely to succeed with funding. Cost-share programs that may be available to help implement BMPs include CWA 319 program, Environmental Quality Incentives Program (EQIP), and Conservation Reserve Program (CRP).

EPA finds that this criterion has been adequately addressed.

9. Monitoring Plan to Track TMDL Effectiveness

EPA's 1991 document, Guidance for Water Quality-Based Decisions: The TMDL Process (EPA 440/4-91-001), recommends a monitoring plan to track the effectiveness of a TMDL, particularly when a TMDL involves both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur. Such a TMDL should provide assurances that nonpoint source controls will achieve expected load reductions and, such TMDL should include a monitoring plan that describes the additional data to be collected to determine if the load reductions provided for in the TMDL are occurring and leading to attainment of water quality standards.

Comment:
The TMDL report did not outline a monitoring strategy. The references in the TMDL document, however, list the publication *Kankakee River Watershed Restoration Action Strategy. Part II: Concerns and Recommendations (IDEM, 2001).* This document indicates that the Assessment Branch of the Office of Water Quality has already adopted a rotating basin cycle in its intensive monitoring and assessment of Indiana waterbodies in addition to the already established fixed

monitoring station monitoring, which occurs on a monthly basis. The resulting data can therefore be used to assess the effectiveness of the TMDL.

EPA finds that this criterion has been adequately addressed.

10. Implementation

EPA policy encourages Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired by nonpoint sources. Regions may assist States/Tribes in developing implementation plans that include reasonable assurances that nonpoint source LAs established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. In addition, EPA policy recognizes that other relevant watershed management processes may be used in the TMDL process. EPA is not required to and does not approve TMDL implementation plans.

Comment:
IDEM has outlined potential implementation activities described under the Reasonable Assurance Section of the decision document.

IDEM states that implementation is best done through a TMDL or watershed plan. The references in the TMDL document list the publication *Kankakee River Watershed Restoration Action Strategy. Part II: Concerns and Recommendations (IDEM, 2001).*

EPA finds that this criterion has been adequately addressed.

11. Public Participation

EPA policy is that there should be full and meaningful public participation in the TMDL development process. The TMDL regulations require that each State/Tribe must subject calculations to establish TMDLs to public review consistent with its own continuing planning process (40 C.F.R. §130.7(c)(1)(ii)). In guidance, EPA has explained that final TMDLs submitted to EPA for review and approval should describe the State's/Tribe's public participation process, including a summary of significant comments and the State's/Tribe's responses to those comments. When EPA establishes a TMDL, EPA regulations require EPA to publish a notice seeking public comment (40 C.F.R. §130.7(d)(2)).

Provision of inadequate public participation may be a basis for disapproving a TMDL. If EPA determines that a State/Tribe has not provided adequate public participation, EPA may defer its approval action until adequate public participation has been provided for, either by the State/Tribe or by EPA.

Comment:

- Kickoff public meetings were held in Renssalaer, IN on May 19, 2008 and Kankakee, IL on May 20, 2008. IDEM, Illinois Environmental Protection Agency (IEPA), EPA, and Tetra Tech explained the TMDL process during these meetings, presented initial

information regarding the Kankakee/Iroquois River Watershed, and answered questions from the public.

- A second public meeting was held on March 24, 2009. The draft findings of the TMDL were presented at the meeting and the public had the opportunity to ask questions and provide information to be included in the final TMDL document.
- IEPA and IDEM provided public notices for all meetings by placing a display ad in the *Kankakee Daily Journal*. Public notices were also sent to NPDES dischargers and other stakeholders in the watershed giving the time, date, location, and purpose of the meetings. The public notice also provided references to obtain additional information about the TMDL program. A draft of the TMDL document was available for review at the Watseka City Hall and on the Agency's web page at: http://www.epa.state.il.us/water/tmdl

The public comment period ran from March 2, 2009 through April 23 2009, and IDEM received comments from the public. Attachment A to the TMDL document contains a responsiveness summary in response to questions and comments from the public. IDEM responded to the public comments appropriately.

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this eleventh element.

12. Submittal Letter

A submittal letter should be included with the TMDL submittal, and should specify whether the TMDL is being submitted for a *technical review* or *final review and approval.* Each final TMDL submitted to EPA should be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for EPA review and approval. This clearly establishes the State's/Tribe's intent to submit, and EPA's duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final review and approval, should contain such identifying information as the name and location of the waterbody, and the pollutant(s) of concern.

Comment:
EPA received the Final Kankakee/Iroquois River Watershed on July 1, 2009 accompanied by a submittal letter dated June 18, 2009. In the submittal letter, IDEM stated the submission includes the final TMDLs for *E. coli* bacteria (AU 04100007 – 110 on Indiana's 2006 303(d) list). An attachment to the TMDL submittal letter contained a list of TMDLs for streams sampled in 2008 and found to be impaired. These streams were likely to be listed in 2010 and, therefore, had TMDLs as well.

EPA is approving TMDLs in the Kankakee/Iroquois River Watershed that include some HUC-12 subwatersheds that contain segments that were not on Indiana's approved 2008 303(d) list. While developing the TMDL, additional sampling was done on numerous waterbodies in the watershed. The HUC-12 subwatersheds were clearly identified in the draft TMDL (dated March 2009). The public had the opportunity to comment on the TMDLs including the additional data and TMDL calculations during the public comment period. The TMDL report discusses the

E.coli impairment for the HUC-12 subwatersheds, and IDEM determined the TMDL target concentration for all HUC-12 subwatersheds based on Indiana WQSs.

EPA believes it was reasonable for IDEM to develop TMDLs for additional waterbodies in the watershed at the time of the development of the originally listed segments. Because the public had the opportunity to comment on the decision to determine these waterbodies as impaired, as well as the development of the TMDLs based on Indiana's *E. coli* water quality standard, and because IDEM's public notice for these TMDLS and its transmittal letter of the final TMDL states that the TMDL report is for the Kankakee/Iroquois River Watershed, EPA believes it is appropriate to approve all 80 submitted TMDLs at this time.

EPA finds that the TMDL submittal from IDEM has satisfied all requirements for this element.

13. Conclusion

After a full and complete review, EPA finds that the Indiana TMDLs for the Kankakee/Iroquois River Watershed satisfies all of the elements of an approvable TMDL. This approval addresses 72 HUC-12 subwatersheds (see Table 1, attached). Some HUC-12 subwatershed TMDLs address multiple 2006-listed segments as listed in Table 1, attached, for a total of 80 TMDLs.

EPA's approval of this TMDL does not extend to those waters that are within Indian Country, as defined in 18 U.S.C. Section 1151. EPA is taking no action to approve or disapprove TMDLs for those waters at this time. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under the CWA Section 303(d) for those waters

Table 1: Summary of Indiana TMDLs for Kankakee and Iroquois Rivers/ 2006 and 2010 303(d) listings.

	HUC 12	TMDL TABLE #	Name	TMDL High flow 0-10 lbs/day	TMDL Moist 10-40 lbs/day	TMDL Mid-range 40-65 lbs/day	TMDL Dry 65-90 lbs/day	TMDL Low Flow 90-100 lbs/day
1	071200010102☺	71	JORDANS CREEK	118.84	67.46	48.7	37.05	27.38
2	071200010103☺	72	PINE CREEK - UNNAMED TRIBUTARY	201.14	114.17	82.43	62.71	46.34
3	071200010105☺	73	POTATO CREEK INK 125_00	191.09	108.47	78.31	59.57	44.03
4	071200010106☺	74	CANAL DITCH UNNAMED TRIB INK126_00	602.08	341.77	246.73	187.71	138.71
5	071200010203☺	79	GEYER DITCH	405.88	230.39	166.33	126.54	93.51
6	071200010204☺	80	NIESPODZIANY DITCH	110.12	62.51	45.13	34.33	25.37
7	071200010206☺	81	KANKAKEE RIV CANAL INK0113_00	584.19	331.61	239.4	182.13	134.59
8	071200010208☺	82	LITTLE KANKAKEE RIVER INK011C_00	292.38	165.97	119.82	91.15	67.36
9	071200010209☺	83	KANKAKEE RIVER - INK11D_T1002	1168.84	663.49	478.99	364.4	269.29
10		83	INK11A-T1001					
11	71200010405	88	Kankakee Mainstem - INK0131_T1003	2318.39	1316.03	950.09	722.79	534.14
12		88	INK0133_T1004	2318.39	1316.03	950.09	722.79	534.14
13		88	INK0134_T1005	2318.39	1316.03	950.09	722.79	534.14
14		88	INK0138_00	2318.39	1316.03	950.09	722.79	534.14
15		88	INK0138_T1006	2318.39	1316.03	950.09	722.79	534.14
16	071200010302☺	151	YELLOW R. Klein Rouch INK 0153_T1016	506.32	124.33	60.2	32.63	18
17	071200010303☺	152	ARMEY DITCH INK0154_00	252.93	62.11	30.07	16.3	8.99
18		152	INK155_00	252.93	62.11	30.07	16.3	8.99
19	071200010305☺	153	BUNCH DITCH, W. BR. INK0157_00	416.27	102.22	49.49	26.83	14.8
20	071200010307☺	154	KINNEY DITCH	375.46	92.2	44.64	24.2	13.35
21	71200010309	155	LAKE OF THE WOODS INK0158_00	1482.08	363.93	176.2	95.51	52.7
22	071200010311☺	156	SELLENRIGHT DITCH	125.81	30.89	14.96	8.11	4.47
23	071200010312☺	157	YELLOW RIVER -Milton Sellenright - INK015F_00	2407.58	591.19	286.23	155.16	85.6

Table 1: Summary of Indiana TMDLs for Kankakee and Iroquois Rivers/ 2006 and 2010 303(d) listings.

24	071200010408 ☺	90	KANKAKEE RIVER - INK013C_T1007	2692.56	1528.42	1103.42	839.44	620.34
25	071200010501 ☺	162	WOLF CREEK	243.29	59.74	28.92	15.68	8.65
26	071200010503 ☺	163	YELLOW RIVER/IISTENBER INK0165_00	3081.18	756.6	366.32	198.56	109.55
27	071200010504 ☺	164	EAGLE CREEK	354.96	87.16	42.2	22.88	12.62
28	071200010505 ☺	165	YELLOW RIVER/ Ober INK0166_00	3280.18	805.47	389.98	211.39	116.63
29	071200010506 ☺	166	YELLOW RIVER/Knox INK016A_00	3706.75	910.21	440.69	238.88	131.8
30	071200010601 ☺	170	BOGUS RUN	195.01	71.12	32.12	14.45	7.8
31	071200010603 ☺	171	KANKAKEE RIVER - UNNAMED TRIB	386.95	141.12	63.73	28.68	15.48
32	071200010604 ☺	172	BOGUS RUN	730.69	266.49	120.35	54.16	29.23
33	071200010701 ☺	95	MORSE DITCH	167.68	95.18	68.72	52.28	38.63
34	071200010702 ☺	96	ROBBINS DITCH - UNNAMED TRIBUTARY	176.92	100.43	72.5	55.16	40.76
35	071200010703 ☺	97	ROBBINS DITCH	494.68	280.81	202.72	154.22	113.97
36	071200010704 ☺	98	NEWTSON DITCH	227.74	129.28	93.33	71	52.47
37	071200010705 ☺	99	KANKAKEE RIVER - UNNAMED TRIBUTARY INK0147_T1009	3379.08	1918.13	1384.76	1053.48	778.51
38		99	INK0146_T1008	3379.08	1918.13	1384.76	1053.48	778.51
39	071200010802 ☺	105	HANNA ARM OF TUESBURG DITCH	271.16	98.89	44.66	20.1	10.85
40	071200010806 ☺	107	KANKAKEE RIVER INK0183_M1011	8246.2	3007.44	1358.2	611.19	329.85
41	071200010807 ☺	108	KANKAKEE RIVER	8897.82	3245.09	1465.52	659.49	355.91
42	071200010902 ☺	112	WOLF CREEK	275.98	100.65	45.46	20.45	11.04
43	071200010904 ☺	113	HODGE DITCH	614.31	224.04	101.18	45.53	24.57
44	071200011001 ☺	?118	SLOCUM DITCH	218.5	61.07	30.23	16.32	7.26
45	071200011005 ☺	?119	GREIGER DITCH	477.89	133.56	66.12	35.7	15.87
46	071200011006 ☺	120	HEINOLD DITCH - UNNAMED TRIBUTARY	694.69	194.14	96.11	51.9	23.07
47	071200011009 ☺	122	CORNELL DITCH	176.46	49.31	24.41	13.18	5.86
48	071200011010 ☺	123	KANKAKEE RIVER INK019F-M1113	13,547	3,786	1,874	1,012	450

Table 1: Summary of Indiana TMDLs for Kankakee and Iroquois Rivers/ 2006 and 2010 303(d) listings.

49		123	KANKAKEE RIVER INK019F-M1104	13,547	3,786	1,874	1,012	450
50	071200011101 ☺	127	TYLER DITCH	279.13	110.02	56.78	32.67	23.59
51	071200011103 ☺	128	KANKAKEE RIVER	12,420	4,530	2,046	921	497
52	071200011203 ☺	132	BOGUS ISLAND DITCH	422.44	154.07	69.58	31.31	16.9
53	071200011205 ☺	133	KANKAKEE RIVER	13,139	4,792	2,164	974	526
54	071200011302 ☺	138	STONY RUN HEADWATER	306.1	85.55	42.35	22.87	10.16
55	071200011304 ☺	139	GRIESEL DITCH	263.25	73.57	36.42	19.67	8.74
56	071200011305 ☺	140	BRYANT/SINGLETON INK01D3_00	517.24	144.55	71.56	38.64	17.17
57	071200011306 ☺	141	CEDAR CREEK UPSTREAM OF CEDAR LAKE	1052.86	127.74	60.06	41	26.85
58	071200011308 ☺	143	WEST CREEK	193.44	54.06	26.76	14.45	6.42
59	071200011310 ☺	144	WEST CREEK	499.27	139.53	69.07	37.3	16.58
60	071200011311 ☺	145	SINGLETON DITCH	1974.54	551.82	273.18	147.52	65.56
61	071200020103 ☺	177	OLIVER DITCH	806.3	215.84	89.31	34.73	13.65
62	071200020204 ☺	182	CARPENTER CREEK	228.47	63.91	24.29	8.31	3.04
63	071200020205 ☺	183	CARPENTER CREEK INK0238_00	526.87	147.38	56	19.16	7
64	071200020206 ☺	184	SLOUGH CREEK INK0235_T1019	1413.19	395.3	150.21	51.39	18.78
65	71200020303	189	IROQUOIS RIVER INK0223_T1003	518.24	138.73	57.41	22.32	8.77
66	071200020304 ☺	190	RYAN DITCH	527.45	141.19	58.42	22.72	8.93
67	071200020305 ☺	191	IROQUOIS RIVER INK0226_T1004	2133.87	571.22	236.37	91.92	36.11
68	071200020401 ☺	195	CURTIS CREEK	376.5	105.31	40.02	13.69	5
69	071200020403 ☺	196	HUNTER DITCH	415.46	116.21	44.16	15.11	5.52
70	071200020404 ☺	197	DARROCH DITCH	582.09	162.82	61.87	21.17	7.73
71	071200020405 ☺	198	IROQUOIS RIVER	5110.51	1429.51	543.22	185.84	67.9
72	071200020502 ☺	202	HAMBRIDGE DITCH	405.7	87.55	28.56	5.87	1.81
73	071200020503 ☺	203	IROQUOIS RIVER - UNNAMED TRIBUTARY	5679.73	1225.63	399.82	82.21	25.41
74	071200020505 ☺	204	MONTGOMERY DITCH	513.61	111.94	37.46	8.82	3.7
75	071200020506 ☺	205	MONTGOMERY DITCH	785.77	169.56	55.31	11.37	3.52
76	071200020702 ☺	223	MUD CREEK	401.53	86.65	28.27	5.81	1.8

Table 1: Summary of Indiana TMDLs for Kankakee and Iroquois Rivers/ 2006 and 2010 303(d) listings.

77	071200020703 ☺	224	FINIGAN DITCH	166.74	35.98	11.74	2.41	0.75
78	071200020705 ☺	226	SUGAR CREEK	967.83	208.85	68.13	14.01	4.33
79	071200021302 ☺	262	BEAVER CREEK - UNNAMED TRIBUTARY	408.23	116.04	40.07	10.96	3.78
80	071200021303 ☺	263	BEAVER CREEK	574.9	163.42	56.43	15.44	5.32

TMDLs with individual segment numbers are 2006 TMDL listed segments. TMDLs without segment numbers are HUC 12 Watersheds with TMDLs that contain segments that will be listed in 2010.

Table 2. Individual WLAs for NPDES Facilities in the Kankakee/Iroquois watershed TMDLs.

Major Subwatershed	Facility Name	Permit ID	Applicable to the Loading Capacities at the Following Segments	Design Flow (MGD)	Fecal coliform WLA (Billion/day)	*E. Coli* WLA (Billion/day)	Max Design Flow (MGD)	Fecal coliform WLA (Billion/day)
Lower Iroquois	Central Hs&Nash Middle School	IL0037206	IL_FL_02	0.01	0.08		0.026	0.20
	Cissna Park STP	IL0042391	IL_FLI-02, IL_FL_02, FL-05	0.10	0.76		0.25	1.89
	Clifton STP	IL0049573	IL_FL_02	0.20	1.51		0.5	3.79
	Gilman-North STP	IL0025062	IL_FL_02, FL-05	0.50	3.79		1.15	8.71
	Il Dot-I-57 Iroquois County	ILG551072	IL_FL_02, FL-05	0.02	0.12		0.0405	0.31
	Iroquois Mobile Estates	IL0047040	IL_FL_02	0.01	0.08		0.025	0.19
	Merkle-Knipprath Nursing Home	ILG551007	IL_FL_02, FL-05	0.02	0.11		0.0375	0.28
	Milford STP	IL0023272	IL_FLI-02, IL_FL_02, FL-05	0.20	1.51		1.3	9.84
	Morocco WWTP	IN0060798	HUC21303, IL_FL_02	0.15	1.14	0.71	0.15	1.14
	Onarga STP	IL0076813	IL_FL_02, FL-05	0.25	1.89		0.878	6.65
	Prairieview Luthern Home	IL0037397	IL_FL_02, FL-05	0.01	0.09		0.03	0.23
	Rankin STP	ILG580122	IL_FLI-02, IL_FL_02, FL-05	0.08	0.61		0.304	2.30
	Swissland Packing Company	IL0065358	IL_FL_02, FL-05	0.03	0.21		0.03	0.23
	Watseka STP	IL0022161	IL_FL-04, IL_FL_02, FL-05	1.60	12.11		4	30.28
Middle Kankakee	Boone Grove Elem & Middle Sch	IN0045888	HUC11009, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.02	0.17	0.11	0.02	0.17
	Boone Grove High School WWTP	IN0057029	HUC11007, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.02	0.14	0.09	0.02	0.14
	Buckhill Estates WWTP	IN0058548	HUC11306, HUC11312	0.02	0.15	0.09	0.02	0.15

Table 2. Individual WLAs for NPDES Facilities in the Kankakee/Iroquois watershed TMDLs.

Major Subwatershed	Facility Name	Permit ID	Applicable to the Loading Capacities at the Following Segments	Design Flow (MGD)	Fecal coliform WLA (Billion/day)	*E. Coli* WLA (Billion/day)	Max Design Flow (MGD)	Fecal coliform WLA (Billion/day)
	Dalecarlia Utilities Lake Dale	IN0033081	HUC11306, HUC11312	0.04	0.33	0.21	0.04	0.33
	Demotte Municipal WWTP	IN0039926	HUC11101, HUC11103, HUC11205	0.50	3.76	2.35	0.50	3.76
Middle Kankakee	Hebron Municipal WWTP	IN0020061	INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.03	0.19	0.12	0.03	0.19
	Hebron WWTP	IN0061450	INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.03	0.19	0.12	0.03	0.19
	Kankakee Rest Area	IN0031275	HUC11101, HUC11103, HUC11205	0.05	0.37	0.23	0.05	0.37
	Kouts Municipal WWTP	IN0023400	INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.33	2.50	1.56	0.33	2.50
	La Crosse Municipal WWTP	IN0040193	HUC10805, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.07	0.51	0.32	0.07	0.51
	Lake Eliza Conservancy Dist	IN0051446	HUC11007, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.09	0.66	0.41	0.09	0.66
	Lincoln Elementary School	IN0030503	HUC11101, HUC11103, HUC11205	0.03	0.26	0.16	0.03	0.26
	Little Co Of Mary Health Fac	IN0053104	INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.04	0.30	0.19	0.04	0.30
	Lowell WWTP	IN0023621	HUC11306, HUC11312	4.00	30.28	18.93	4.00	30.28
	Martis Place Bomars River Ldg	IN0058823	HUC10904, HUC11103, HUC11205	0.01	0.06	0.04	0.01	0.06
	Morgan Township School	IN0052248	INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.01	0.10	0.06	0.01	0.10

Table 2. Individual WLAs for NPDES Facilities in the Kankakee/Iroquois watershed TMDLs.

Major Subwatershed	Facility Name	Permit ID	Applicable to the Loading Capacities at the Following Segments	Design Flow (MGD)	Fecal coliform WLA (Billion/day)	*E. Coli* WLA (Billion/day)	Max Design Flow (MGD)	Fecal coliform WLA (Billion/day)
	North Newton Jr Sr High School	IN0031143	HUC11203, HUC11205	0.03	0.23	0.14	0.03	0.23
	Schneider WWTP	IN0040592	HUC11307, HUC11312	0.07	0.49	0.31	0.07	0.49
	South Haven Sewer Works WWTP	IN0030651	HUC11101, HUC11103, HUC11205	2.00	15.14	9.46	2.00	15.14
Middle Kankakee	Town Of Monterey WWTP	IN0060852	HUC10904, HUC11103, HUC11205	0.03	0.23	0.15	0.03	0.23
	Twin Lakes Utilities	IN0037176	HUC11302, INK01D3_00, HUC11312	1.10	8.33	5.20	1.10	8.33
	Wanatah Wastewater Trmt Plant	IN0056669	HUC11001, HUC11005, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.08	0.59	0.37	0.08	0.59
	Washington Twp School WWTP	IN0057703	HUC11006, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.04	0.30	0.19	0.04	0.30
	Water Services Co Of Indiana	IN0039101	HUC11101, HUC11103, HUC11205	0.16	1.17	0.73	0.16	1.17
	Westville Correctional Center	IN0042978	HUC11006, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.75	5.68	3.55	0.75	5.68
	Westville WWTP	IN0024848	HUC11006, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.35	2.65	1.66	0.35	2.65
	Wheatfield Municipal WWTP	IN0040754	HUC10902, HUC10904, HUC11103, HUC11205	0.08	0.58	0.36	0.08	0.58
	Winfield Elementary School	IN0031127	HUC11302, INK01D3_00, HUC11312	0.01	0.08	0.05	0.01	0.08
Upper Iroquois	Brook Municipal WWTP	IN0039764	HUC20503, IL_FL-04, IL_FL_02, FL-05	0.10	0.76	0.47	0.10	0.76

Table 2. Individual WLAs for NPDES Facilities in the Kankakee/Iroquois watershed TMDLs.

Major Subwatershed	Facility Name	Permit ID	Applicable to the Loading Capacities at the Following Segments	Design Flow (MGD)	Fecal coliform WLA (Billion/day)	*E. Coli* WLA (Billion/day)	Max Design Flow (MGD)	Fecal coliform WLA (Billion/day)
	George Ade Mem Health Care Ctr	IN0050997	HUC20405, IL_FL-04, HUC20503, IL_FL_02	0.01	0.11	0.07	0.01	0.11
	Goodland Municipal WWTP	IN0040070	HUC20403, HUC20404, HUC20405, IL_FL-04, HUC20503, IL_FL_02	0.10	0.72	0.45	0.10	0.72
	Grandmas Home Cooking	IN0053422	HUC20401, HUC20405, IL_FL-04, HUC20503, IL_FL_02	0.03	0.22	0.14	0.03	0.22
Upper Iroquois	Kentland Municipal WWTP	IN0023329	HUC20505, IL_FL-04, HUC20506, IL_FL_02, FL-05	0.46	3.48	2.18	0.46	3.48
	Remington WWTP	IN0020940	HUC20204, INK0235_T1019, INK0238_00, HUC20405, IL_FL-04, HUC20503	0.43	3.25	2.03	0.43	3.25
	Rensselaer Municipal STP	IN0024414	INK0226_T1004, HUC20405, IL_FL-04, HUC20503, IL_FL_02	1.20	9.08	5.68	1.20	9.08
	Trail Tree Inn	IN0041904	HUC20401, HUC20405, IL_FL-04, HUC20503, IL_FL_02	0.26	1.94	1.21	0.26	1.94
Upper Kankakee	Hamlet Municipal STP	IN0040100	INK0147_T1009, INK0146_T1008, INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, HUC10703	0.10	0.76	0.47	0.10	0.76

Table 2. Individual WLAs for NPDES Facilities in the Kankakee/Iroquois watershed TMDLs.

Major Subwatershed	Facility Name	Permit ID	Applicable to the Loading Capacities at the Following Segments	Design Flow (MGD)	Fecal coliform WLA (Billion/day)	*E. Coli* WLA (Billion/day)	Max Design Flow (MGD)	Fecal coliform WLA (Billion/day)
	Kingsbury Utility Corp	IN0045471	INK0138_T1006, INK0131_T1003, INK0134_T1005, INK0133_T1004, INK013C_T1007, INK0147_T1009, INK0146_T1008, INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	2.50	18.93	11.83	2.50	18.93
Upper Kankakee	Kingsford Heights Municipal WWTP	IN0023337	INK013C_T1007, INK0147_T1009, INK0146_T1008, INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.42	3.19	2.00	0.42	3.19
	La Porte Municipal STP	IN0025577	INK0138_T1006, INK0131_T1003, INK0134_T1005, INK0133_T1004, INK013C_T1007, INK0147_T1009, INK0146_T1008, INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	7.00	53.00	33.12	7.00	53.00

Table 2. Individual WLAs for NPDES Facilities in the Kankakee/Iroquois watershed TMDLs.

Major Subwatershed	Facility Name	Permit ID	Applicable to the Loading Capacities at the Following Segments	Design Flow (MGD)	Fecal coliform WLA (Billion/day)	*E. Coli* WLA (Billion/day)	Max Design Flow (MGD)	Fecal coliform WLA (Billion/day)
	North Liberty WWTP	IN0025801	INK0126_00, INK0125_00, INK0138_T1006, INK0131_T1003, INK0134_T1005, INK0133_T1004, INK013C_T1007, INK0147_T1009, INK0146_T1008, INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.18	1.36	0.85	0.18	1.36
Upper Kankakee	Potato Creek State Park	IN0052272	INK0126_00, INK0125_00, INK0138_T1006, INK0131_T1003, INK0134_T1005, INK0133_T1004, INK013C_T1007, INK0147_T1009, INK0146_T1008, INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.09	0.70	0.44	0.09	0.70
	Swan Lake Golf Resort	IN0061085	INK0147_T1009, INK0146_T1008, INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, HUC10702, HUC10703	0.04	0.27	0.17	0.04	0.27

Table 2. Individual WLAs for NPDES Facilities in the Kankakee/Iroquois watershed TMDLs.

Major Subwatershed	Facility Name	Permit ID	Applicable to the Loading Capacities at the Following Segments	Design Flow (MGD)	Fecal coliform WLA (Billion/day)	*E. Coli* WLA (Billion/day)	Max Design Flow (MGD)	Fecal coliform WLA (Billion/day)
	Walkerton Municipal WWTP	IN0040690	HUC10103, INK0126_00, INK0138_T1006, INK0131_T1003, INK0134_T1005, INK0133_T1004, INK013C_T1007, INK0147_T1009, INK0146_T1008, INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205	0.36	2.76	1.72	0.36	2.76
Upper Kankakee	Yogi Bears Jellystone Park	IN0041882	INK0147_T1009, INK0146_T1008, INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC10701, HUC11103, HUC11205, HUC10703	0.11	0.79	0.50	0.11	0.79
Yellow River	Argos Municipal WWTP	IN0022284	INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, HUC10501, INK0165_00, INK0166A_00, INK0166_00	0.21	1.61	1.00	0.21	1.61
	Bass Lake Conservancy District	IN0058289	INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, HUC10601, HUC10604, HUC10603	0.28	2.15	1.34	0.28	2.15

Table 2. Individual WLAs for NPDES Facilities in the Kankakee/Iroquois watershed TMDLs.

Major Subwatershed	Facility Name	Permit ID	Applicable to the Loading Capacities at the Following Segments	Design Flow (MGD)	Fecal coliform WLA (Billion/day)	*E. Coli* WLA (Billion/day)	Max Design Flow (MGD)	Fecal coliform WLA (Billion/day)
Yellow River	Bremen Municipal WWTP	IN0020427	INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, INK0158_00, INK015F_00, INK0165_00, INK0166A_00, INK0166_00	1.30	9.84	6.15	1.30	9.84
	Convent Ancilla Domini	IN0025160	INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, HUC10504	0.05	0.35	0.22	0.05	0.35
	Knox Municipal WWTP	IN0021385	INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, INK0166A_00	0.70	5.30	3.31	0.70	5.30
	Lake Of The Woods Reg Sew Dist	IN0057002	INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, INK0157_00, INK0158_00, INK015F_00, INK0165_00, INK0166A_00, INK0166_00	0.14	1.02	0.64	0.14	1.02

Table 2. Individual WLAs for NPDES Facilities in the Kankakee/Iroquois watershed TMDLs.

Major Subwatershed	Facility Name	Permit ID	Applicable to the Loading Capacities at the Following Segments	Design Flow (MGD)	Fecal coliform WLA (Billion/day)	*E. Coli* WLA (Billion/day)	Max Design Flow (MGD)	Fecal coliform WLA (Billion/day)
	Lapaz Municipal WWTP	IN0040223	INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, HUC10311, INK0165_00, INK0166A_00, INK0166_00	0.13	0.95	0.60	0.13	0.95
	North Judson Municipal WWTP	IN0020877	INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, HUC10604	0.47	3.56	2.22	0.47	3.56
	Plymouth WWTP	IN0020991	INK0183_M1011, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, INK0165_00, INK0166A_00, INK0166_00	3.50	26.50	16.56	3.50	26.50

Table 3. Individual WLAs for CSO Communities in the Kankakee/Iroquois River Watershed TMDLs.

Major Subwatershed	Permit #	Facility	Fecal coliform WLA (Billion/day)	*E. Coli* WLA (Billion/day)	Applicable to the Loading Capacities at the Following Segments
Lower Iroquois	IL0023272	Milford STP	13.48		IL_FLI-02, IL_FL_02, FLI-01, FL-05
Lower Iroquois	IL0022161	Watseka STP	37.85		IL_FL-04, IL_FL_02, FL-05
Upper Iroquois	IN0024414	Rensselaer Municipal STP		858.67	INK0226_T1004, HUC20405, IL_FL-04, HUC20503, IL_FL_02, FL-05
Middle Kankakee	IN0023621	Lowell Municipal STP		203.64	HUC11306, HUC11311

Table 3 Continued					
Yellow	IN0020991	Plymouth Municipal STP		2.84	HUC10807,INK0183_M1011 , INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, INK0165_00, INK0166A_00, INK0166_00
Yellow	IN0020877	North Judson Municipal		23.66	INK0183_M1011, HUC10807, INK019F_M1113, INK019F_M1104, HUC11103, HUC11205, HUC10604

Table 4. Individual WLAs for MS4 Communities in the Kankakee/Iroquois River Watershed TMDLs.

Major Subwatershed	Facility	Permit ID	Applicable to the Loading Capacities at the Following Segments	Area in Drainage (sq miles)	Fecal coliform WLA (Billion/day)	*E. Coli* WLA (Billion/day)
Lower Kankakee	City of Kankakee	ILR400363	IL_FL_02	0.069	0.84	
	Kankakee County	ILR400260	IL_FL_02	0.068	0.83	
	City of Crown Point	INR040054	HUC11311	0.35		2.83
	City of Crown Point	INR040054	HUC11306	0.35		5.07
	Hillsborough County-Valparaiso	INR04073 Co-Permit	HUC11006	0.27		2.18
	Hillsborough County-Valparaiso	INR04073 Co-Permit	HUC11103,HUC11205	1.9		12.48
	Hillsborough County-Valparaiso	INR04073 Co-Permit	INK019F_M1113, INK019F_M1104	1.9		15.36
	Lake County	INR040124	HUC11311	9.38		75.85
	Lake County	INR040124	HUC11306	9.38		135.97
	Lakes of the Four Seasons POA	INR040007	HUC11311,HUC11302,INK01D3_00	1.09		8.81
	Porter County	INR040140	HUC11006	0.58		4.69
	Porter County	INR040140	HUC11103,HUC11205	2.96		19.45
	Porter County	INR040140	INK019F_M1113, INK019F_M1104	2.96		23.93
	Town of Cedar Lake	INR040075	HUC11308	0.96		7.76
	Town of Cedar Lake	INR040075	HUC11310	1.35		10.92
	Town of Cedar Lake	INR040075	HUC11306	6.35		92.05
	Town of Cedar Lake	INR040075	HUC11311	7.7		62.26
	Town of Lowell	INR040046	HUC11304	0.91		7.36
Middle Kankakee	Town of Lowell	INR040046	HUC11306	2.82		40.88
	Town of Lowell	INR040046	HUC11311	4.16		33.64
	Town of St. John	INR040047	HUC11311,HUC11308,HUC11310	4.29		34.69
Upper Kankakee	La Porte County	INR040107	INK011C_00,INK011A_T1001,INK011D_T1002	0.01		0.05
	La Porte County	INR040107	INK0138_T1006, INK0131_T1003, INK0134_T1005, INK0133_T1004,INK013C_T1007,INK0147_T1009, INK0146_T1008	14.93		78.04
	La Porte County	INR040107	HUC11103,HUC11205,INK0183_M1011,HUC10807	14.93		98.10
	La Porte County	INR040107	INK019F_M1113, INK019F_M1104	14.93		120.73
	South Bend	INR040114	HUC10203	0.22		1.15

Table 4. Individual WLAs for MS4 Communities in the Kankakee/Iroquois River Watershed TMDLs.

Major Subwatershed	Facility	Permit ID	Applicable to the Loading Capacities at the Following Segments	Area in Drainage (sq miles)	Fecal coliform WLA (Billion/day)	*E. Coli* WLA (Billion/day)
Upper Kankakee	South Bend	INR040114	INK0112_00,INK013C_T1007,INK0147_T1009, INK0146_T1008,INK011A_T1001,INK011D_T1002,INK0138_T1006, INK0131_T1003, INK0134_T1005, INK0133_T1004	3.42		17.88
	South Bend	INR040114	INK0183_M1011,HUC11103,HUC11205,HUC10807	3.42		22.47
	South Bend	INR040114	INK019F_M1113, INK019F_M1104	3.42		27.65
Yellow	Plymouth	INR040064	INK015F_00	0.55		4.63
	Plymouth	INR040064	HUC10311	2.36		19.88
	Plymouth	INR040064	INK0183_M1011,HUC10807,HUC11205,HUC11103	6.97		45.80
	Plymouth	INR040064	INK019F_M1113, INK019F_M1104	6.97		56.36
	Plymouth	INR040064	INK0166A_00,INK0165_00,INK0166_00	6.97		58.72

Table 5. Individual WLAs for CAFOs in the Kankakee/Iroquois River Watershed TMDLs.

Major Subwatershed	HUC 10	HUC 10 Name	NPDES ID	Operation Name	*E. Coli* WLA (Billion/day)
Upper Kankakee	712000101	Pine Creek	ING802239	Walkerton Farm	0
	712000102	Little Kankakee River-Kankakee River	ING806085	Scher-Way Dairy Farm	0
	712000107	Robbins Ditch-Kankakee River	ING800149	N&L Pork, Inc. - Lee Nagai - Home Site	0
Middle Kankakee	712000108	Pitner Ditch-Kankakee River	ING806292	David And Brenda Wolfe	0
			ING801092	Smoker Farms	0
	712000111	Knight Ditch-Kankakee River	ING804410	Dekock Feedlot, Inc.	0
			ING801782	Dekock Feedlot Inc.	0
			ING802170	Bos Farms-Dry Cow Facility	0
			ING806155	Bos Dairy Site # 4	0
	712000112	Beaver Lake Ditch-Kankakee River	ING806015	Fair Oaks Dairy Farm North	0
			ING806154	Herrema Dairy	0
Yellow River	712000103	Headwaters Yellow River	ING8040910	Fred Beer Farms, Inc.	0
			INA006440	Walnut Grove Dairy, LLC	0
			ING800005	J & T Laidig Farms	0
	712000105	Yellow River	ING804918	Homestead Dairy	0
Upper Iroquois	712000201	Oliver Ditch	ING806083	Newberry Farms, LLC	0
	712000202	Slough Creek	ING802689	Tip Top Pigs Inc #1	0
			ING803422	White County Egg Farm	0
	712000203	Bruner Ditch-Iroquois River	ING800876	Grow Feedlots	0
			ING806045	Windy Ridge Dairy	0
	712000204	Curtis Creek-Iroquois River	ING806207	Seven Hills Dairy, LLC	0
			ING803372	Newton County Egg Farm	0
			N/A	Cambalot Swine Breeders	0
			ING806036	Fair Oaks Dairy Farm South	0
			ING803732	Calf Land, LLC	0
			ING806341	Fair Oaks Dairy Farm, LLC. - North Central # 5	0

			ING806065	Fair Oaks Dairy Farm West	0
Lower Iroquois	712000213	Beaver Creek	ING803684	Storey Pork Farm	0

TABLE 6 Indiana Load Allocations

HUC #	Table in TMDL	High Flows	Moist Conditions	Mid-Range Flows	Dry Conditions	Low Flows
71200010102	71	106.96	60.71	43.83	33.35	24.64
71200010103	72	179.31	101.04	72.47	54.72	39.99
71200010105	73	170.69	96.33	69.19	52.33	38.34
71200010106	74	538.86	304.58	219.05	165.93	121.83
71200010203	79	364.14	207.35	149.7	113.89	84.16
71200010204	80	99.11	56.26	40.62	30.9	22.83
71200010206	81	507.89	298.45	215.46	164.92	121.13
71200010208	82	263.1	149.37	107.84	82.04	60.63
71200010209	83	1034.03	597.14	431.1	327.96	242.36
	83	1034.03	597.14	431.1	327.96	242.36
71200010405	88	1942.67	1136.47	807.12	602.55	432.55
	88	1942.67	1136.47	807.12	602.55	432.55
	88	1942.67	1136.47	807.12	602.55	432.55
	88	1942.67	1136.47	807.12	602.55	432.55
	88	1942.67	1136.47	807.12	602.55	432.55
71200010408	90	2277.42	1325.62	943.12	705.54	508.35
71200010701	95	150.41	85.17	61.35	46.55	34.27
71200010702	96	159.06	90.22	65.08	49.47	36.51
71200010703	97	444.07	251.59	181.31	137.66	101.43
71200010704	98	204.97	116.35	84	63.9	47.22
71200010705	99	2894.15	1675.22	1195.19	897.03	649.56
	99	2894.15	1675.22	1195.19	897.03	649.56
71200010802	105	244.04	89	40.2	18.09	9.77
71200010806	107	7145.56	2623.55	1139.23	466.92	213.72
71200010807	108	7731.51	2836.92	1235.31	509.88	236.66
71200010902	112	248	90.22	40.55	18.05	9.58
71200010904	113	552.33	201.09	90.52	40.43	21.57
71200011001	118	196.29	54.59	26.84	14.32	6.16
71200011005	119	429.73	119.83	59.14	31.76	13.91
71200011006	120	612.95	169.34	81.11	41.32	15.37
71200011009	122	158.7	44.27	21.86	11.76	5.16
71200011010	123	11,830	3,316	1,595	819	313
	123	11,830	3,316	1,595	819	313
71200011101	127	238.28	86.08	38.16	16.46	8.29
71200011103	128	10,848	3,972	1,736	724	342
71200011203	132	380.06	138.52	62.48	28.04	15.07
71200011205	133	11,495	4,207	1,842	771	367
71200011302	138	261.43	71.75	32.87	15.33	3.9
71200011304	139	229.57	66.21	32.78	17.7	7.87
71200011305	140	451.45	124.85	59.15	29.53	10.2

71200011306	141	450.73	95.74	34.83	17.68	4.94
71200011308	143	131.65	48.65	24.09	13.01	5.78
71200011310	144	403.74	125.58	62.17	33.57	14.92
71200011311	145	1513.98	471.85	221.08	107.98	34.22
71200010302	151	1513.98	471.85	221.08	107.98	34.22
71200010303	152	227.64	55.9	27.06	14.67	8.09
	152	227.64	55.9	27.06	14.67	8.09
71200010305	153	374.01	91.36	43.9	23.51	12.68
71200010307	154	337.91	82.98	40.18	21.78	12.02
71200010309	155	1482.08	363.92	176.2	95.51	52.7
71200010311	156	92.75	27.21	12.87	6.7	3.43
71200010312	157	2155.4	525.28	250.82	132.85	70.25
71200010501	162	217.96	52.77	25.03	13.11	6.78
71200010503	163	2687.12	655.99	304.74	153.76	73.65
71200010504	164	319.25	78.23	37.76	20.37	11.14
71200010505	165	2866.22	699.97	326.03	165.3	80.02
71200010506	166	3246.61	790.71	368.14	186.51	90.14
71200010601	170	175.51	64.01	28.91	13.01	7.02
71200010603	171	346.91	125.67	56.02	24.47	12.59
71200010604	172	630.39	236.27	104.75	45.17	22.74
71200020103	177	725.67	194.26	80.38	31.26	12.29
71200020204	182	203.59	55.49	19.83	5.45	0.71
71200020205	183	472.15	130.61	48.37	15.21	4.27
71200020206	184	1269.84	353.74	133.16	44.22	14.87
71200020303	189	466.42	124.86	51.67	20.09	7.89
71200020304	190	474.71	127.07	52.58	20.45	8.04
71200020305	191	2133.87	571.22	236.37	91.92	36.11
71200020401	195	337.5	93.43	34.67	10.97	3.15
71200020403	196	373.46	104.14	39.29	13.15	4.52
71200020404	197	523.43	146.09	55.24	18.6	6.51
71200020405	198	3731.22	1276.99	479.33	157.69	51.54
71200020502	202	365.13	78.8	25.7	5.28	1.63
71200020503	203	4243.04	1093.03	349.8	63.95	12.83
71200020505	204	460.07	98.57	31.54	5.76	1.15
71200020506	205	705.01	150.43	47.6	8.06	0.99
71200020702	223	361.38	77.99	25.44	5.23	1.62
71200020703	224	150.07	32.38	10.57	2.17	0.68
71200020705	226	871.05	187.97	61.32	12.61	3.9
71200021302	262	367.41	104.44	36.06	9.87	3.4
71200021303	263	516.7	146.37	50.08	13.19	4.08